CIVIL QUALITY CONSULTANTS & ENGINEERS

(Buildings Geo-Tech & Highway Materials Testing Laboratory)
An ISO 9001: 2015 Certified Company
NABL Accredited As Per ISO/IEC : 17025:2005 Laboratory

JAS-ANZ
ISO 9001:2000 CERTIFIED

Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date : 30.07.2019

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.

Agency : **Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.

Name of Work : Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.

Date of Testing : 30.07.2019

Material : Stone Dust

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	85	8.50	8.50	91.5	90-100
2.36	150	15.00	23.50	76.5	75-100
1.18	169	16.90	40.40	59.6	55-90
600 Micron	210	21.00	61.40	38.6	35-59
300 Micron	208	20.80	82.20	17.8	8-30
150 Micron	130	13.00	95.20	4.8	0-10

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date 23.01.2019

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD
(IS : 2720 - Part 28)

Client : **Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.

Agency : **Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.

Name of work : Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.

Date of Testing : 03.08.2019 to 05.08.2019

Material Source : Wet Mix Macadam

Max.Dry Density g/cc	2.27
Optium Moisture Content (%)	7.29
Bulk Density of Sand g/cc(ys)	1.35 g/cc
Wt. of Sand in Cone gms	335 grams

DETERMINATION OF WET DENSITY	
Test Holes No's	1
Offset from centre of alignment & chainage	Abbigere Village F Bus stop
Wt of the Moist soil from excavated hole = W	1980
Wt.of Cylinder+Sand before pouring (gm) (w1)	6800
Wt.of Sand in the cone (gm) (w2)	335
Wt.of the Cylinder and sandfilling the excavated hole (w4)	5280
Wt of the sand in the excavated hole wb=w1-w4-w2	1185
Volume of Sand in Hole = (v=wb/Ys)=cm^3	877.78
Insitu Bulk density Wet excavated soil Y=w/v	2.26
Moisture Content (%)	
DETERMINATION OF DRY DENSITY	
Field dry Density (g/cc)	2.26
Field compaction achieved (%)	99.37
Required Compaction (%)	98

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20

Date: 08.08.2019

TEST REPORT

Client	:	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	:	**Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.
Name of the work	:	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Date of testing	:	08.08.2019

The results of the tests conducted on the bitumen sample using for Semi Dense Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	85	80 to 100
2	Softening point, ^{0}C	44	Min. 40
3	Ductility at 27^{0}C, cm	100 >	Min. 75
4	Flash Point, ^{0}C	302	Min. 220

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date: 08.08.2019

Aggregate Impact Value

IS: 2386 Part IV

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (Professional global infrastructure privited limited),**
Name of the Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	08.08.2019

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	382	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	83	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	297	297	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	21.84	22.25	22.66	22.25

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 Date: 08.08.2019

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.
Name of Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	08.08.2019

Result : Flakiness Index = **12.85%**

Elongation Index = **14.12%**

Result : Combined Flakiness & Elongation index **26.97%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

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Job No.: CQCE/BBMP/MY/W.No.12/2019-20 08.08.2019

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Executive Engineer,** Dasarahalli Zone, BBMP, Bangalore.
Agency	**Sri. M. Yogesh (Professional global infrastructure privited limited),** Bangalore.
Name of the Work	Restoration of road cut portion done by BWSSB (For water line and sanitary Line) in Abbigere village F Bus stop surrounding area in ward no.12, Shettyhalli sub division , BBMP, Bangalore.
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	08.08.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2024	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1265	1267	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2017	2019	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	750	750	750	
6	Weight of oven dried aggregate	W_4 g	2009	2010	2011	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.679	2.680	2.681	2.680
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.700	2.705	2.710	2.705
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.30%	0.35%	0.40%	0.35%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

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